

### **REMARKS**

This Amendment and Response is in reply to the Office Action of June 23, 2009. Therefore, the time for reply extends up to and includes September 23, 2009. Applicants wish to thank the Examiner for careful review and consideration of the present application.

Claim 1 has been amended. Support for the amendment can be found at least at page 4 lines 22 – 24 and Examples 5, 6 and 7 (page 20 line 33 to page 22, line 11) all of WO 2005/073416. No new matter has been added. Claims 1 – 36 are pending. Because no new issues have been raised by the above amendments, this Amendment After Final is proper and Applicants request that the amendments be entered.

### **§ 102 Rejections**

#### **Preston**

Claims 1 – 4, 6 – 10, 18 – 20, 23 – 26 and 28 stand rejected under 35 U.S.C. § 102(b) as anticipated by Preston (GB 2,109,357). Applicants respectfully traverse the rejection.

Preston does not disclose all of the elements of Applicants' claim 1. More specifically, claim 1 of the present application recites a process for the separation of nickel, cobalt or both from impurity elements selected from one or more of calcium, magnesium, manganese and chloride contained in a leach solution, the process comprising the step of contacting the leach solution with a solvent extraction solution comprising a carboxylic acid, an aliphatic hydroxyoxime and a kinetic accelerator. Examples 5, 6 and 7 (at page 20 line 33 to page 22, line 11 of WO 2005/073416) further support the claim amendment comprising the step of contacting the leach solution with a solvent extraction solution comprising a carboxylic acid, an aliphatic hydroxyoxime and a kinetic accelerator. Accordingly, the process requires using each of these three reagents together.

The additives which Preston teaches that greatly enhance the utility of the extractants are non-chelating oximes (*see* page 1, line 50). Nothing in Preston discloses or suggests the use of a carboxylic acid, an aliphatic hydroxyoxime and a kinetic accelerator together.

In view of the above, Preston does not disclose and/or teach all of the recited elements of claim 1. Claims 2 – 4, 6 – 10, 18 – 20, 23 – 26 and 28 all ultimately depend from claim 1, and so those claims are also allowable.

**Cheng et al.**

Claims 1, 2, 4 – 7, 14, 15, 16, 22, 23, 26, 27, 30, 31 and 36 stand rejected under 35 U.S.C. § 102(b) as anticipated by Cheng (WO 02/22896). Applicants respectfully traverse the rejection.

Cheng et al. do not disclose all elements of Applicants' claim 1. As noted above, claim 1 of the present application recites a process for the separation of nickel, cobalt or both from impurity elements selected from one or more of calcium, magnesium, manganese and chloride contained in a leach solution, the process comprising the step of contacting the leach solution with a solvent extraction solution comprising a carboxylic acid, an aliphatic hydroxyoxime and a kinetic accelerator. Accordingly, the process requires using each of these three reagents together.

In direct contrast, Cheng et al. provides "methods of separating nickel, cobalt or both from other cations contained in a leach solution, the method including the steps of subjecting the leach solution to **separate solvent extraction steps** using organophosphoric acid, a carboxylic acid and an organophosphinic acid" (page 4, lines 2 – 6 and claim 1 of Cheng et al.; emphasis added). Cheng et al. do not disclose and/or teach a process whereby each of the three reagents, a carboxylic acid, an aliphatic hydroxyoxime and a kinetic accelerator, are used together. Furthermore, Cheng et al. do not disclose and/or teach an aliphatic hydroxyoxime as recited in claim 1.

In view of the above, Cheng et al. do not disclose and/or teach all of the recited elements of claim 1. Claims 2, 4 – 7, 14, 15, 16, 22, 23, 26, 27, 30, 31 and 36 all ultimately depend from claim 1, and so those claims are also allowable.

Applicants request withdrawal of the rejections under 35 U.S.C. 102(b) and reconsideration of the claims. Applicants do not otherwise concede the correctness of the §102 rejections and reserve the right to make additional arguments as may be necessary.

## **§ 103 Rejections**

### **Preston in view of Davis et al.**

Claims 11 – 13 and 18 stand rejected under 35 U.S.C. § 103 as obvious over Preston (GB 2,109,357) further in view of Davis (US 4,104,359). Applicants respectfully traverse the rejection.

As described above, Preston discloses “carboxylic acids as the metal extractants in the presence of additives which greatly enhance the utility of the extractants under certain conditions” (*see* page 1 lines 6 – 8 of Preston). As taught by Preston, the additives that greatly enhance the utility of the extractants are non-chelating oximes (*see* page 1, line 50). Nothing in Preston discloses or teaches the use of a carboxylic acid, an aliphatic hydroxyoxime and a kinetic accelerator together.

Furthermore, the examples of Preston compare the use of TBP (a kinetic accelerator) with the use of an oxime as separate additives (Table, page 1 of Preston) and infer there is no advantage in using TBP as the additive. Noting that  $pH_{0.5} = pH$  at which 50% extraction would take place, this inference is drawn from the fact that the value of  $\Delta pH_{0.5}$  (which is  $pH_{0.5}^{\text{without additive}} - pH_{0.5}^{\text{with additive}}$ ) for TBP additive alone (-0.14 for Co and 0.04 for Ni; second line of Table) is small compared with the value of EHO (2-ethyl-hexanal oxime; 1.69 for Co and 2.53 for Ni). Therefore, there is no motivation or teaching that the use of a carboxylic acid, an aliphatic hydroxyoxime and a kinetic accelerator (TBP) used together would improve metal extraction. If anything, the  $\Delta pH_{0.5}$  data derived by Preston teaches away from the use of TBP as enhancing metal extraction.

Davis et al. do not remedy the deficiencies of Preston. Davis et al. disclose at least one oxime, selected from the group consisting of ketoximes and  $\alpha$ -hydroxyoximes dissolved in an organic solvent (*see* Abstract of Davis). Furthermore, Davis does not recognize the advantages of using a carboxylic acid, an aliphatic hydroxyoxime and a kinetic accelerator together as recited in claim 1.

Since Preston and Davis et al. do not disclose and/or suggest the invention recited in claim 1 (either alone or in combination) and since claims 11-13 and 18 ultimately depend from claim 1, reconsideration and withdrawal of the rejection is requested.

**Cheng et al.**

Claim 17 stands rejected under 35 U.S.C. § 103 as obvious over Cheng et al. (WO 02/22896). Applicants respectfully traverse the rejection.

As described above, Cheng et al. provides “methods of separating nickel, cobalt or both from other cations contained in a leach solution, the method including the steps of subjecting the leach solution to **separate solvent extraction steps** using organophosphoric acid, a carboxylic acid and an organophosphinic acid” (page 4, lines 2 – 6 and claim 1 of Cheng et al.; emphasis added). Cheng et al. do disclose a non-chelating oxime (page 7, line 28) as a synergist. However, Cheng et al. do not disclose the process whereby a carboxylic acid, an aliphatic hydroxyoxime and a kinetic accelerator are used together.

Also, while Cheng et al. disclose the use of carboxylic acid in the extraction process where the carboxylic acids contains any optionally substituted aliphatic or aromatic group, Cheng et al, do not disclose or recognize the importance of the process whereby a carboxylic acid, an aliphatic hydroxyoxime and a kinetic accelerator are used together.

Since Cheng et al. do not disclose and/or suggest the invention recited in claim 1 (either alone or in combination) and since claim 17 ultimately depends from claim 1, reconsideration and withdrawal of the rejection is requested.

**Preston**

Claim 21 stands rejected under 35 U.S.C. § 103 as obvious over Preston (GB 2,109,357). Applicants respectfully traverse the rejection.

As described above, Preston discloses “carboxylic acids as the metal extractants in the presence of additives which greatly enhance the utility of the extractants under certain conditions” (*see* page 1 lines 6 – 8 of Preston). The additives which Preston teaches that greatly enhance the utility of the extractants are non-chelating oximes (*see* page 1, line 50). Nothing in

Preston suggests or teaches the use of a carboxylic acid, an aliphatic hydroxyoxime and a kinetic accelerator together.

Since Preston does not disclose and/or suggest the invention recited in claim 1 (either alone or in combination) and since claim 21 ultimately depends from claim 1, reconsideration and withdrawal of the rejection is requested.

**Cheng in view of Hummelstedt**

Claims 29, 32, 33, 34 and 35 stand rejected under 35 U.S.C. § 103 as obvious over Cheng (WO 02/22896) and further in view of Hummelstedt (US 4,120,817). Applicants respectfully traverse the rejection.

As described above, Cheng et al. provides “methods of separating nickel, cobalt or both from other cations contained in a leach solution, the method including the steps of subjecting the leach solution to **separate solvent extraction steps** using organophosphoric acid, a carboxylic acid and an organophosphinic acid” (page 4, lines 2 – 6 and claim 1 of Cheng et al.; emphasis added). Cheng et al. do disclose a non-chelating oxime (page 7, line 28) as a synergist. However, Cheng et al. do not disclose the process whereby a carboxylic acid, an aliphatic hydroxyoxime and a kinetic accelerator are used together.

Hummelstedt et al. do not remedy the deficiencies of Cheng et al. Hummelstedt et al. disclose an extraction agent comprising at least one strong organic acid affecting the phase interface tension for diminishing drop size of the dispersed phase (*see* Abstract of Hummelstedt et al.). Furthermore, Hummelstedt et al. do not recognize the importance of the synergistic use of a carboxylic acid, an aliphatic hydroxyoxime and a kinetic accelerator together, as in the presently claimed invention.

Since Cheng et al. and Hummelstedt et al. do not disclose and/or suggest the invention recited in claim 1 (either alone or in combination) and since claims 29, 32, 33, 34 and 35 ultimately depend from claim 1, reconsideration and withdrawal of the rejection is requested.

In view of the above comments, Applicants respectfully request withdrawal of the rejections under 35 U.S.C. 103(a) and reconsideration of the claims. Applicants do not otherwise

concede the correctness of the §103 rejections and reserve the right to make additional arguments as may be necessary.

### Conclusion

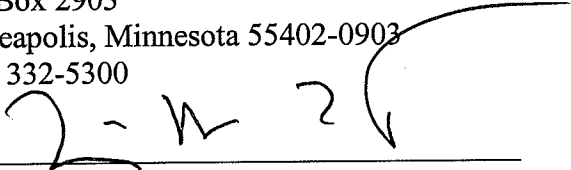
In view of the above amendments and remarks, Applicants respectfully request a Notice of Allowance. If the Examiner believes a telephone conference would advance the prosecution of this application, the Examiner is invited to telephone the undersigned at the below-listed telephone number.

Please charge any additional fees or credit any overpayment to Merchant & Gould P.C., Deposit Account No. 13-2725.

Respectfully submitted,

MERCHANT & GOULD P.C.  
P.O. Box 2903  
Minneapolis, Minnesota 55402-0903  
(612) 332-5300

Date: 24 August 2009

  
\_\_\_\_\_  
Brian H. Batzli  
Reg. No. 32,960  
BHB:CPM:jrm

